COLLIDER-ACCELERATOR DEPARTMENT

Title: EMS Training For Metal Cleaning Operations

Prepared by: M Van Essendelft

Group: ESH&Q

Approvals

Signature on File Date:

ESH&Q Division Head

Signature on File Date:

Collider-Accelerator Department Chairman

(Indicate additional signatures)

Y	N		
☐	x	FS Representative:	Date:
☐	x	Radiological Control Coordinator:	Date:
☐	x	Chief ME:	Date:
☐	x	Chief EE:	Date:
☐	x	Environmental/P2 Coordinator:	Date:
☐	x	QA Manager:	Date:
x	☐	Other: *Signature on File*	Date:

Environmental Training Package for Metal Cleaning Operations

This package has been designed to aid in the delivery of required job-specific training for the following metal cleaning activities in buildings 922 and 919B identified in the environmental process evaluation

- Acid cleaning of metal parts
- Rinsing metal parts following acid cleaning
- Radioactive, hazardous and industrial waste generation
- Atmospheric discharges
- Storage/Use of chemicals

Your position has been determined to have significant potential to impact the environment. Thus, C-A Department Management has prepared the questions & answers on the following pages for your specific work/processes.

This environmental material is incorporated into your current job and procedure training. If you have specific questions about this information after you have read the material, contact the C-A Department ESH&Q Division Head, Ray Karol (mailto:rck@bnl.gov).

You may keep this material as a handout and use it as a reference aid.

This specific training course is linked to your job-training assessment (JTA). You must read and acknowledge this material as part of the qualification to perform metal cleaning operations. Please fill out the Read and Acknowledgement form and return it promptly.

Read & Acknowledgement Form

Environmental Process Evaluation Title: Metal Cleaning Operations

Environmental Aspects: Hazardous Waste, Atmospheric Discharge, Regulated Industrial Waste, Radioactive Waste, Storage/Use of Chemicals

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Course Objective: Because your work activities have been identified as having significant potential to impact the environment, this course has been designed to provide you with the job-specific information that you must know to protect the environment.

1) What potential impacts to the environment are associated with your activities?

- Metal cleaning operations can release radioactive materials or hazardous chemicals. The following materials in your work may have adverse impacts if improperly handled:
    - Chemicals such as AC-500 (a phosphoric acid solution) and sodium bicarbonate (used to neutralize the used acid) are hazardous
    - Metal cleaning rinse water is hazardous and may be radioactive
    - Rinse water filters are hazardous and may radioactive

2) What consequences may result if your operations were to impact the environment?

- Hazardous, industrial or radioactive waste mismanagement could contaminate the environment and incur RCRA or local agency penalties
- Improper discharges to the sanitary sewer system could result in a violation of the BNL State Pollutant Discharge Elimination System (SPDES) permit
- Atmospheric discharges could contaminate the environment and/or violate NYSDEC air emission regulations
- Improper release of radioactive materials to uncontrolled areas may result in enforcement actions under Federal Rule 10CFR835
- Improper release of wastes can create loss of the regulator and public trust

3) What benefits or positive effects would you notice with improved environmental performance?

- Safer, cleaner workplace
- Clear roles and responsibilities
- Improved relationship with regulators and the public
- Control of disposal costs
- Prevention of remediation costs
- Reduced emissions

4) What role and responsibility do you have for these potential impacts and environmental performance?

- To ensure hazardous, radioactive and industrial wastes are handled according to C-A procedures
- To ensure controls are in place
- To ensure controls keep working
- To take action when controls fail
- To create and keep appropriate records relative to operational controls
- To contact supervision if you are unsure of how to perform the work or if the procedures are unclear or incorrect

5) What controls or procedures are implemented to reduce the potential for emergency?

- C-A OPM 8.20, Procedure for Handling and Disposing of Hazardous Waste
- C-A OPM 8.20.2, Radioactive Waste Disposal
- C-A OPM 8.22, Procedure for Handling and Disposal of Non-Hazardous and Recyclable Solid Waste
- C-A OPM 8.20.1, C-A Hazardous Waste Trailer (HWT) (90 Day Accumulation Area)
- C-A OPM 2.28, Enhanced Work Planning (C-A version of ES&H Std. 1.3.6)
- Satellite Accumulation Area
- Chemical Management System
- Tier I program and self-evaluations

6) How would you respond in an emergency to reduce the potential for environmental impact and what actions could be taken to mitigate the event?

- See C-A OPM 3.0, Local Emergency Plan for the C-A Department
- Call Spill Response Hotline – X2222 or 911 (If calling from a cell phone, dial (631) 344-2222)

7) What pollution prevention and waste minimization techniques have been or could be considered to reduce or eliminate the potential to impact the environment?

- Instead of mixing spent rinse water with spent AC-500 acid solution during metal cleaning operations in Building 919B, segregate spent rinse water in a separate drum. When the drum is full, characterize it prior to disposal. It may not be hazardous and disposal costs can be reduced.
- Install a self-contained rinse water sink/dip tank in Building 919B similar to Building 922. This will reduce the rinse water volumes since it will be recirculated and reused for an extended period.
- If you ensure that all fittings and connections are properly made and are promptly verified to be leak-tight when cleaning metals.
- Place a dedicated drum for waste cleaning solutions next to the metal cleaning operations area in Building 919B. This will eliminate the need to manually transfer waste liquids to the subgrade area satellite area and reduce the chance of spills.
- Place the AC-500 acid tank in secondary containment in Building 919B.

Suggestions or comments about pollution prevention or waste minimization are always welcome by C-A management.

8) Are there any key Environmental-specific Competency Requirements for this position?

- None

Additional Environmental Information:

Click on the items below to learn more about C-A Metal Cleaning Operations.

- Process Assessment for C-A Metal Cleaning Operations
- Environmental Management Program for C-A Metal Cleaning Operations
- Operational Control Form for C-A Metal Cleaning Operations